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IS 11081 (1993): Agricultural Tractors - Half Cage Wheel
[FAD 11: Agricultural Tractors and Power Tillers]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

कृषि ट्रैक्टर — अर्ध उत्थापक पहिया — विशिष्ट

(पहला पुनरीक्षण)

Indian Standard

AGRICULTURAL TRACTORS — HALF CAGE
WHEEL — SPECIFICATION

(*First Revision*)

UDC 631.372 : 629.114.2.012.3

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BUREAU OF INDIAN STANDARDS

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NEW DELHI 110002

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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Agricultural Tractors and Power Tillers Sectional Committee, FAD 32 had been approved by the Food and Agriculture Division Council.

For increasing the traction in puddled soil condition of paddy field, half cage wheels are in use as an attachment to the pneumatic wheel of agricultural tractors. The dimensions and other details of half cage wheel differ considerably with different manufacturers. In order to guide the users and the manufactures this standard was first published in the year 1984. This revision has been brought out incorporating Amendment 1 and more details on the width of half cage wheel.

In revision of this standard the assistance has been derived from Tractors & Farm Equipment Limited, Madras.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AGRICULTURAL TRACTORS — HALF CAGE WHEEL — SPECIFICATION

(First Revision)

1 SCOPE

This standard specifies material, dimensions and other requirements of half cage wheels for agricultural tractors.

2 REFERENCES

The following Indian Standards are necessary adjunct to this standard:

IS No.	Title
226 : 1975	Structural steel — specification
7201	Method of sampling for agricultural machinery and equipment : Part 1 Hand tools and hand operated/animal drawn equipment

3 TYPES

For the purpose of this standard, the cage wheel shall be of the following types:

- a) Type 1 — Suitable for 11'2/10 — 28 size of tractor tyres.

- b) Type 2 — Suitable for 12'4/11 — 28 size of tractor tyres.

- c) Type 3 — Suitable for 13'6/12 — 28 size of tractor tyres.

- d) Type 4 — Suitable for 16'9/14 — 28 size of tractor tyres.

4 MATERIAL

The material of various components of the half cage wheel shall be mild steel (see IS 226 : 1975) or any material having quality of at par with mild steel.

5 DIMENSIONS

5.1 The wheel shall be so designed that when mounted on a matching tractor, the radial clearance between the dynamic radius of tyre and the cage wheel lugs, when the tyre is new and inflated to the recommended pressure, shall be minimum of 25 mm.

5.1.1 On the basis of the requirements of 5.1 the overall diameter of various types of the cage wheel (see A in Fig. 1) should be as given in

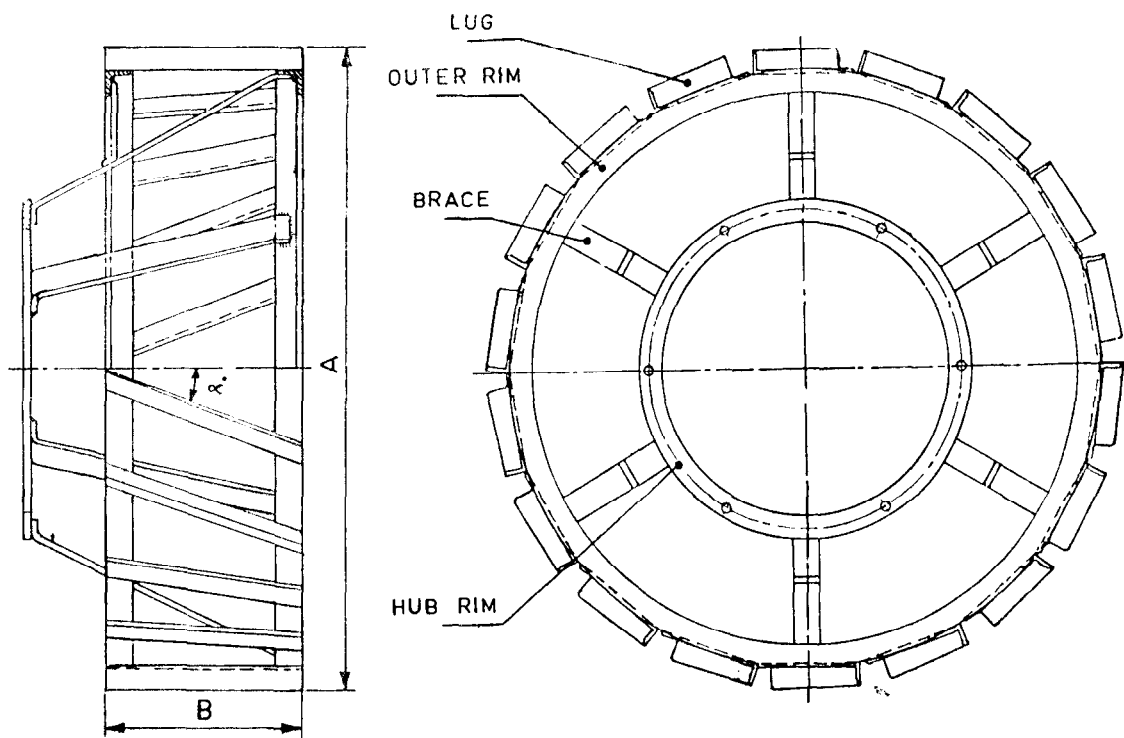


FIG. 1 HALF CAGE WHEEL FOR TRACTORS

the following table:

Type of Cage Wheel	Outer Diameter (mm) (+ 10) (- 0)	Width (mm) (± 5) (see B in Fig. 1)
1	1 085	350
2	1 140	350
3	1 185	350
4	1 310	400

5.2 The wheel shall be so designed that when mounted on a matching tractor the axial clearance between the tyre inflated to the recommended pressure and the cage wheel shall be 25 + 5 mm min.

-0

5.3 The recommended number of lugs should be 18. The lugs shall be equally spaced on the lug base. The deviation in the lug spacing shall be not more than 5 mm. The recommended lug angle (see Fig. 1) shall be 15° to 20°. The minimum, nominal size of the angle for lug shall be 50 × 50 × 5 mm however, 65 × 65 × 5 mm size should be preferred. Equivalent T section may also be used instead of angle section. In case of angled lugs, the left hand and right hand wheels should be supplied as a set having angles as a mirror image of each other.

5.4 In case mounted on the rim, the mounting dimensions such as size of hole, pitch circle diameter shall be in accordance with the corresponding dimensions of the steel rim.

6 WORKMANSHIP AND FINISH

6.1 The components shall be free from pits, burrs, cracks and other visual defects.

6.2 The various components shall be rigidly attached and welding shall not be porous.

6.3 The components shall be painted to prevent surface deterioration.

7 MARKING

7.1 Each half cage wheel shall be marked with the manufacturer's name and registered trade mark, if any. Batch of code number shall also be marked. Cage wheels may also be marked on the outer rim face as 'L.H.' or 'R.H.' as the case may be.

7.2 Each half cage wheel may also be marked with the Standard Mark.

8. SAMPLING FOR LOT ACCEPTANCE

8.1 Unless otherwise agreed to between the purchaser and the supplier, sampling of the half cage wheel for lot acceptance shall be done in accordance with 3 of IS 7201 : 1974.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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Amendments Issued Since Publication

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AMENDMENT NO. 1 JULY 1995
TO
IS 11081 : 1993 AGRICULTURAL TRACTORS — HALF
CAGE WHEEL — SPECIFICATION

(First Revision)

(Page 1, clause 2) — Substitute 'IS 2062 : 1992 Steel for general structural purposes (*fourth revision*)' for 'IS 226 : 1975 Structural steel — specification'.

(Page 1, clause 4, second line) — Substitute 'IS 2062 : 1992' for 'IS 226 : 1975'.

(Page 2, clause 5.2, last line) — Substitute '25 mm Min' for ' 25^{+5}_{-0} mm min'.

(Page 2, clause 8.1, last line) — Substitute 'IS 7201 (Part 1) : 1987' for 'IS 7201 : 1974'.

(FAD 32)

Reprography Unit, BIS, New Delhi, India